

What is claimed is:

1. A vacuum fluorescent display comprising:
2 a cathode electrode for emitting electrons;
3 a grid electrode for extracting the electrons
4 from said cathode electrode;
5 an anode electrode for accelerating the
6 electrons extracted from said cathode electrode;
7 at least one envelope which accommodates said
8 cathode electrode, said grid electrode, and said anode
9 electrode in a vacuum space and has a display portion
10 having light transmission properties;
11 a phosphor layer formed on an inner surface of
12 the display portion of said envelope and adapted to emit
13 light upon bombardment of the electrons accelerated by
14 said anode electrode; and
15 a cap made of an X-ray shielding material and
16 supported outside said envelope so as to surround the
17 display portion of said envelope through a gap, said cap
18 having a light exit surface from which the light emitted
19 from said phosphor layer emerges through the display
20 portion of said envelope.

2. A display according to claim 1, wherein said
2 cap is made of lead glass having light transmission
3 properties.

3. A display according to claim 1, further
2 comprising a cooling liquid sealed in the gap.

4. A display according to claim 1, wherein said
2 cathode electrode contains carbon nanotubes.

5. A display according to claim 1, wherein said
2 cap comprises

3 a cylindrical portion made of an X-ray
4 shielding material containing lead glass having light
5 transmission properties, and

6 a front surface glass member made of
7 translucent lead glass having light transmission
8 properties and fitted in one opening of said cylindrical
9 portion corresponding to the display portion of said
10 envelope.

6. A display according to claim 1, wherein said
2 cap surrounds said envelope entirely.

7. A display according to claim 6, wherein
2 said envelope has a stem in which a plurality
3 of lead pins to be connected to said electrodes are
4 buried and which has an outer diameter slightly larger
5 than that of said envelope, and
6 a portion between a tip of an opening of said
7 cap and said envelope is sealed by the stem to form the

8 gap.

8. A display according to claim 7, wherein said
2 stem is made of an insulating elastic material.

9. A display according to claim 7, further
2 comprising
3 a cooling liquid sealed in the gap, and
4 a liquid reservoir formed in the stem to
5 communicate with the gap.

10. A display according to claim 1, wherein
2 said envelope comprises a plurality of
3 envelopes corresponding to a plurality of colors, and
4 said cap surrounds display portions of the
5 plurality of envelopes all together.